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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

ANGUS O. DOUGHERTY et al.

Group Art Unit: 2665

Examiner: R. Shand

Serial No.: 09/605,696

Filed: June 28, 2000

For: DISTRIBUTIVELY ROUTED VDSL AND HIGH-SPEED INFORMATION PACKETS

Attorney Docket No.: 1759CIP (USW0577PUS)

APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents
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Sir:

This is an Appeal Brief from the final rejection of claims 10-46 of the Office Action mailed on June 14, 2005 for the above-identified patent application.

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I. REAL PARTY IN INTEREST

The real party in interest is Qwest Communications International Inc. ("Assignee"), a corporation organized and existing under the laws of the state of Delaware, and having a place of business at 1801 California Street, Suite 5100, Denver, Colorado, 80202, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on June 28, 2000, at Reel 010918/Frame 0830, and on July 24, 2000, at Reel 010814/Frame 0339.

II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences known to the Appellant, the Appellant's legal representative, or the Assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 10-46 are pending in this application. Claims 10-46 have been rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

A response after final rejection was mailed on August 23, 2005, in which no amendments were proposed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

With reference to Figures 1 and 9-11, Appellants' invention includes a method of distributing high-speed information packets to at least one subscriber unit. Each information

packet is associated with an information channel. Each information packet is routed through a distributed network of routing elements (41). Each routing element (40) is in wireless communication with at least one other routing element in the network of routing elements. Each information packet is received in a distribution center (500, 504) in communication with the distributed network of routing elements. Each information packet is forwarded to each subscriber unit (26, 502) in communication with the distribution center and requesting the information channel of which the information packet is associated.

The routing of packets in Appellants' invention conforms to the standard use of the term routing.

> Distribution points 40 may route packets within distribution point network 41 under a variety of protocols such as ATM, TCP/IP, 802.x, or the like. In a preferred embodiment, distribution point 40 includes an ATM/IP switch. Distribution point 40 then operates at both the IP routing and ATM switching layers or, in terms of the Open Systems Interconnection (OSI) standard, at both the network layer and the data link layer.
>
> Specification, pg. 11, ll. 5-10.

The use of distributed routing provides several advantages over traditional schemes.

> Each distribution point 40 receives an information packet from either another distribution point 40, from subscriber unit 26 in communication with distribution point 40 through access point 22, or from an external communication system. If distribution point 40 determines the information packet is destined for subscriber unit 26 within coverage area 24 of access point 22 in communication with distribution point 40, distribution point 40 forwards the packet to access point 22 forming coverage area 24 containing destination subscriber unit 26. If distribution point 40 determines the information packet is destined for subscriber unit 26 in coverage area 24 formed by access point 22 in communication with a different distribution point 40, distribution point 40 forwards the packet to one of distribution points 40 in communication with distribution point 40. Hence, no central MSC is required for routing. Distributed routing removes delays caused by central switching, increases the robustness of the communication system 20, increases

> network efficiency, and permits simplified expansion or reduction of communication system 20 by automatically adding or removing distribution points 40.
>
> Specification, pg. 12, ll. 6-20.

A system for providing high-speed packetized information includes a distributed routing network (41) having a plurality of distribution points (40), each distribution point in radio contact with at least one other distribution point. At least one of the distribution points including at least one host digital terminal (HDT 500) for converting high-speed information packets to an optical format and forwarding the information packets to subscriber units (26, 502).

A system for providing packetized video information to a plurality of subscriber units (26, 502) includes a distributed routing network (41) having a plurality of distribution points (40). Each distribution point is in radio contact with at least one other distribution point. At least one of the distribution points functions as a video distribution center (500, 504).

A system for providing packetized video information to a plurality of subscriber units (26, 502) includes a distributed routing network (41) having a plurality of distribution points (40). Each distribution point is in radio contact with at least one other distribution point. At least one access point (22) in communication with the distributed routing network functions as a video distribution center (500, 504).

A system for distributing high-speed information packets to at least one subscriber unit (26, 502), each information packet associated with an information channel. The system includes a distributed network of routing elements (41) for routing each information packet. Each routing element (40) in wireless communication with at least one other routing element in the network of routing elements. At least one distribution center (500, 504) is in communication with the distributed network of routing elements and with at least one subscriber unit. Each distribution center forwards each information packet to each subscriber unit requesting the information channel associated with each information packet.

Aspects of this packet forwarding are claimed in dependent claims and illustrated, for example, in Figures 12 and 13. For example, a method of distributing high-speed information packets to at least one subscriber unit includes receiving a request from a subscriber unit to access an information channel (as in block 600), requesting transmission of the requested information channel if no other subscriber unit is receiving the requested information channel (as in blocks 602 and 603), and noting that the requesting subscriber unit is receiving the requested information channel (as in block 606).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellants believe claims 10-17, 28-43 and 45 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,536,892 to Kostreski *et al.* (Kostreski).[1] Appellants believe claims 20-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kostreski in view of U.S. Patent No. 6,510,152 to Gerszberg *et al.* (Gerszberg)[2]. Appellants believe claims 18, 19, 44 and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kostreski in view of U.S. Patent No. 6,052,744 to Moriarity *et al.*

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[1]The final Office Action states "Claims 10-17, 28-36, 38, 41 and 45 and 28-46 rejected under 35 U.S.C. § 102(b) as being anticipated by Kostreski (U.S. 5536892)." However, the Examiner only provided arguments rejecting claims 10-17, 28-43, and 45. The Examiner was asked to clarify these inconsistencies in an Advisory Action, if one was prepared, in order to put this case in better condition for appeal. An Advisory Action was mailed without addressing this problem.

[2]The Examiner's rejection lists "Gerszberg (U.S. 6049533)." U.S. Patent No. 6,049,533 is to Norman *et al.* The Examiner cited U.S. Patent No. 6,510,152 to Gerszberg *et al.* on form PTO-892 included in the Office Action dated October 6, 2004.

VII. ARGUMENT

Appellants believe claims 10-46, pending in this case, are patentable over the cited art and respectfully request review in light of the following arguments.

A. Claims 10-17, 28-43 and 45 Are Patentable Under 35 U.S.C. § 102(b) Over Kostreski

The Examiner rejected claims 10-17, 28-43 and 45 as anticipated by Kostreski. Appellants disagree, as Kostreski neither teaches nor fairly suggests, *inter alia*, routing information packets through a distributed network of wireless routing elements.

Independent claim 10 provides a method of distributing high-speed information packets to at least one subscriber unit. Each information packet is associated with an information channel. Each information packet is **routed through a distributed network of routing elements**, with each routing element in wireless communication with at least one other routing element in the network of routing elements. Each information packet is received in a distribution center in communication with the distributed network of routing elements. Each information packet is forwarded to each subscriber unit in communication with the distribution center and requesting the information channel of which the information packet is associated.

The Examiner asserts that claim 10 is taught by Kostreski. Kostreski discloses an analog broadcast system which has been adapted to handle digital signals.

> The program transport capacity of an RF broadcast channel is upgraded by replacing analog services with digitally multiplexed services. RF channels can be obtained from one or more parties, e.g. parties holding MDS, MMDS and ITFS licenses for microwave video channels in the high end of the UHF frequency range. Once rights to use the channel have been acquired, a digital multiplexing system is deployed for broadcasting a digital transport stream over each available RF broadcast channel. For license holders who offered an analog service over one channel, the digital transport stream for one channel will include compressed digital data representing information from that program service. The provider therefore can use this transport capacity to continue to offer the existing

> service. The broadcast transport stream for that channel also includes compressed digital data representing one or more new program services. In operation, users of the existing service will obtain a digital receiver; and through that receiver, they will continue to receive the existing service, essentially as an equivalent to the service offered through the analog broadcast on the channel. These users may also receive one or more of the new program services. The new services transported on the digital broadcast system and possibly the existing service may now be offered to new users.
>
> Kostreski, Abstract.

The system includes a transmission system, illustrated in Figure 6, and receiver systems, illustrated in Figure 7. Because Kostreski discloses nothing more than a wireless broadcast system, there is no need for Applicants' wirelessly communicating distributed routing elements.

As is evident from Kostreski's Figure 6 and the supporting text, various sources of baseband video programs are converted in headend (10) to digital information streams, which are multiplexed (12) and modulated (13, 14), with each multiplexed stream having a different RF carrier frequency. The streams are then combined (15), converted to optical (16), and sent to geographically separated transmission systems (17_1 . . . 17_N). There is no routing of packets involved because every transmitter receives the same signal to transmit and the packets are sent as modulated RF signals.

As is evident from Kostreski's Figure 7 and the supporting text, down converter 33 receives the broadcast RF signal. There is no routing involved with the down converter.

> FIG. 7 provides a high-level functional diagram of the receiving systems used in the present invention.
>
> In practice, users or locations associated with the original service provider, e.g. the university that formerly offered an ITFS service on campus, will have a receiving system R'. This receiving system includes an antenna 31, a downconverter 33 and a coaxial distribution system connected to a number of terminals 100. In the dormitory example, the terminals may be located in the rooms of those students whose parents have paid

for their children to subscribe to the university's service and/or the new programming services.

Kostreski, col. 14, ll. 41-52.

The receiving antenna 31 supplies the 2.6 GHz spectrum (through appropriate filtering and/or amplifiers not shown) to a block down-converter 33. The block down-converter converts the 2.6 GHZ signal, containing all of the RF channels, back down to the video channel band of 50-450 MHZ. **The block down-converter supplies the 50-450 MHZ combined spectrum signal via a coaxial cable to one or more terminal devices 100 located at various places in the subscriber's home. Each terminal 100 includes some form of wireless signal processor 35 for processing a selected one of the 6 MHZ channels to recover the digitally multiplexed transport stream carried in that channel.** Each terminal connects to an associated television set 100'. The digital signal processor 37 processes data packets for the selected program from the multiplexed stream to produce signals to drive the TV 100'. The TV 100' presents the program to the viewer in sensorially perceptible form, in this case, as a standard audio/visual output.

Kostreski, col. 15, ll. 33-50 (emphasis added).

There is no routing whatsoever, let alone Applicant's wireless distributed routing. The down converter is nothing more than that — a device which mixes the RF signal down to another frequency range. The output signal is still an RF signal and this signal is sent to every subscriber unit (terminal 100) connected to the down converter.

The Examiner asserts that Kostreski's down converter "is a routing element in the network." (Page 10.) It is not, for Kostreski's down converter performs no routing functions whatsoever. Kostreski's down converter is a receiver and an RF mixer. Neither of these functions is remotely related to routing.

Kostreski does not teach, or fairly suggest, Applicants' invention. Claim 10 is patentable over the cited art.. Claims 11-19 depend from claim 10 and are therefore also patentable.

Independent claim 28 provides a system for providing packetized video information to a plurality of subscriber units. The system includes a distributed routing

network having a plurality of distribution points. Each distribution point is in radio contact with at least one other distribution point. At least one of the distribution points functions as a video distribution center.

The Examiner rejected claim 28 by arguing that Appellants' plurality of distribution points is taught by Kostreski's "transmitter system and down converter." As explained above, Kostreski's broadcast system is not Appellants' distributed routing network, as no routing is taught or fairly suggested by such a broadcast system. Claim 28 is patentable over Kostreski. Claims 29 and 30, which depend from claim 28, are therefore also patentable over Kostreski.

1. Claims 15-19 Are Separately Patentable Over Kostreski

Claim 15, which depends from claim 10, further provides for receiving a request from a subscriber unit to access an information channel. If no other subscriber unit is receiving the requested channel, transmission of the requested information channel is requested. The method further includes noting that the requesting subscriber unit is receiving the requested information channel.

The Examiner rejected claim 15 as taught by Kostreski, providing as the only support "col. 19, lines 30-50." This passage is as follows (emphasis added):

> When the user selects a digital broadcast program, the microprocessor 110 in the main portion of the DET accesses the listing for that channel in the channel map stored in the system memory 120. The microprocessor 110 supplies a message containing the RF channel number and the program number (PN) to the TIM controller 210 via interface 209. In response to the RF channel number, **the TIM controller 210 activates the tuner 201 to tune to the identified channel**. If the program is encrypted, the TIM uses the program number, the program association table in the packet identified by PID 0 and the program map to identify the packets carrying audio, video and data (if any) for the program. If authorized to receive the program as indicated via the renewable security device 211, the decryption module 207 uses a decryption key from its memory

> or from the renewable security device 211 to descramble the information in the payloads of the packets of the selected program. As a result, the TIM 216 [*sic*] passes digital signals from the RF channel through the interface to the MPEG system demultiplexer 129 in the main portion of the DET wherein at least the information for the selected program is now in unencrypted form.

This passage is in reference to Figure 9, which illustrates Kostreski's transport interface module (TIM 101), which is part of Kostreski's "digital entertainment terminal" (DET 100). (See, Figure 8.) The DET is, basically, a "cable box," which receives all signals broadcast on the cable and demodulates the signal requested by the subscriber.

> The DET 100 will include a transport interface module (TIM) 101 providing **the actual physical connection to the coaxial cable network in the subscriber's premises**. The transport interface module (TIM) 101 will also perform the format conversion necessary between signal formats utilized by the network and signal formats used within the digital processing portion of the DET 100. In the present invention, **the TIM performs RF tuning and QAM demodulation**.
>
> Kostreski, col. 15, ll. 52-60

A broadband demodulator neither teaches nor suggests Appellants' receiving a request from a subscriber unit to access an information channel and, if no other subscriber unit is receiving the requested channel, requesting transmission of the requested information channel. On the contrary, Kostreski discloses broadcasting all channels to all subscribers at all times. The subscriber's DET then demodulates the desired channel.

Kostreski does not teach receiving a request from a subscriber unit to access an information channel, requesting transmission of the requested information channel if no other subscriber unit is receiving the requested channel, or noting that the requesting subscriber unit is receiving the requested information channel, as provided in claim 15. Claim 15 is therefore patentable over Kostreski. Claims 16-19, which depend from claim 15, are therefore also patentable even if claim 10 is found unpatentable.

2. Claim 29 Is Separately Patentable Over Kostreski

Claim 29, which depends from claim 28, provides a system for providing packetized video information to a plurality of subscriber units. The system includes a distributed routing network having a plurality of distribution points. Each distribution point is in radio contact with at least one other distribution point. At least one of the distribution points functions as a video distribution center. Claim 29 further provides that at least one of the distribution points is operative to receive requests for video content from at least one subscriber unit and forward those requests to at least one video supplier.

The Examiner argues that Kostreski's "transmitter system and down converter" are Appellants' distribution points. The Examiner then cites Kostreski at column 19, lines 30-50 (reproduced above) as evidence that these distribution points receive requests for video content from at least one subscriber unit and forward those requests to at least one video supplier. The passage cited by the Examiner discusses Kostreski's subscriber units and has nothing to do with Kostreski's transmitter system and down converter. As discussed in detail above, Kostreski discloses a broadcast system for digital cable. As such, there is no need for, nor teaching of, distribution points which receive requests for video content. All available video content is transmitted to all subscribers. Each subscriber unit then demodulates the desired content. Claim 29 is therefore patentable over Kostreski even if claim 28 is found unpatentable.

3. Claim 30 Is Separately Patentable Over Kostreski

Claim 30, which depends from claim 28, provides a system for providing packetized video information to a plurality of subscriber units. The system includes a distributed routing network having a plurality of distribution points. Each distribution point is in radio contact with at least one other distribution point. At least one of the distribution points functions as a video distribution center. Claim 30 further provides that the video

distribution center forwards video information packets comprising a video channel to each subscriber unit served by the video distribution center requesting the video channel.

The Examiner cited Kostreski at column 13, line 60, through column 15, line 50, as teaching that the video distribution center forwards video information packets comprising a video channel to each subscriber unit served by the video distribution center requesting the video channel. Nowhere in this lengthy passage is there any teaching, or even a suggestion, for a subscriber unit which requests anything, let alone a video channel. Once again, Kostreski discloses broadcasting information which is demodulated by the subscriber terminal. There is no need for Kostreski's terminal (100), identified by the Examiner as Appellants' subscriber unit, to request a video channel. Claim 30 is therefore patentable over Kostreski even if claim 28 is found unpatentable.

4. Claims 31-35 Are Separately Patentable Over Kostreski

Independent claim 31 provides a system for providing packetized video information to a plurality of subscriber units. The system includes a distributed routing network with a plurality of distribution points, each distribution point in radio contact with at least one other distribution point. The system also includes at least one access point in communication with the distributed routing network functioning as a video distribution center.

The Examiner rejected claim 31 as anticipated by Kostreski, arguing Kostreski's "transmitter system and down converter" teach Appellants' distributed routing network. As argued above, Kostreski's broadcast system is not Appellants' distributed routing network, as no routing is taught or fairly suggested by such a broadcast system.

In addition, Kostreski neither teaches nor fairly suggests Appellants' access point functioning as a video distribution center. An access point provides the connection between the distributed routing network and subscribers. Appellants' access points are described, with reference to Figure 1, on page 8, lines 10-18, as follows:

> A communication system, shown generally by 20, includes a plurality of access points 22 which may be, for example, a local

> radio access point (LRAP). Each access point 22 defines coverage area 24 such as, for example, a cell, covering a reception range of access point 22. Coverage area 24 may be formed from many independent sectors, as may result if access point 22 uses many unidirectional antennas, or may be a single region resulting from the use of an omnidirectional antenna. Subscriber unit 26 within coverage area 24 may establish two-way wireless link 28 with access point 22. Subscriber unit 26 may also establish wireline link 29 with access point 22.

The Examiner identifies Kostreski's terminal (100) as Appellants' subscriber unit and Kostreski's down converter (33) as part of Appellants' distributed routing network. An examination of Kostreski's Figure 7 and associated text reveals that there is nothing but coaxial cable in between down converter 33 and subscriber unit 100. Thus, according to the Examiner's construction, Kostreski discloses nothing that could function as Appellants' access points. Perhaps that is why, in rejecting claim 31, the Examiner identified no component or device disclosed in Kostreski that functions as Appellants' access point.

Kostreski neither teaches nor fairly suggests anything that functions as an access point and as a video distribution center. There is no need for such a device in Kostreski's cable broadcast invention. As such, Claim 31 is patentable over Kostreski regardless of the patentability of other independent claims. Claims 32-35, which depend from claim 31, are therefore also patentable.

5. Claim 32 Is Separately Patentable Over Kostreski

Claim 32, which depends from claim 31, provides that the access point is operative to receive requests for video content from at least one subscriber unit and forward those requests to at least one video supplier. The Examiner rejected claim 32 as anticipated by Kostreski providing as the only support "col. 13, line 60 – column 15, line 50." The Examiner identified no device disclosed in Kostreski that functions as an access point, or that receives any request from a subscriber unit, identified by the Examiner as Kostreski's terminal (100), for video content, or that forwards any such request to a video supplier.

Kostreski has no need for Appellants' access point because Kostreski discloses a broadcast cable system in which all video content is broadcast to all subscriber units. Claim 32 is patentable over Kostreski even if claim 31 is found not to be patentable because Kostreski neither teaches nor suggests Appellants' access point receiving requests from a subscriber unit and forwarding those requests to a video supplier.

6. Claim 33 Is Separately Patentable Over Kostreski

Claim 33, which depends from claim 31, provides that the access point replicates video information packets comprising a video channel for each of a plurality of subscriber units requesting the video channel. The Examiner rejected claim 33 as anticipated by Kostreski providing as the only support "col. 13, line 60 – column 15, line 50." The Examiner identified no device disclosed in Kostreski that functions as an access point, or that replicates video information packets for each subscriber unit, identified by the Examiner as Kostreski's terminal (100), requesting the video channel.

Kostreski has no need for Appellants' access point because Kostreski discloses a broadcast cable system in which all video content is broadcast simultaneously to all subscriber units. As such, there is no need to replicate video information packets. Claim 33 is patentable over Kostreski even if claim 31 is found not to be patentable because Kostreski neither teaches nor suggests Appellants' access point replicating video information packets.

7. Claims 34-35 Are Separately Patentable Over Kostreski

Claim 34, which depends from claim 31, provides that the access point receives a request to access a video channel from a subscriber unit, determines if the requested video channel is currently being accessed by another subscriber unit served by the access point, and if the requested video channel is not currently being accessed by another subscriber unit served by the access point, forwards the request to a video supplier. The Examiner rejected claim 34 as anticipated by Kostreski providing as the only support "col. 19, lines 30-50." The

Examiner identified no device disclosed in Kostreski that functions as an access point, or that receives a request to access a video channel from a subscriber unit, identified by the Examiner as Kostreski's terminal (100), or that forwards the request to a video supplier if the requested video channel is not currently being accessed by another subscriber unit served by the access point.

Kostreski has no need for Appellants' access point because Kostreski discloses a broadcast cable system in which all video content is broadcast simultaneously to all subscriber units. Claim 34 is patentable over Kostreski even if claim 31 is found not to be patentable because Kostreski neither teaches nor suggests Appellants' access point forwarding the request to a video supplier if the requested video channel is not currently being accessed by another subscriber unit served by the access point. Claim 35, which depends from claim 34, is therefore also patentable.

8. Claim 35 Is Separately Patentable Over Kostreski

Claim 35, which depends from claim 34, provides that the access point is further operative to receive a video information packet from at least one video supplier, determine if the received video packet corresponds to a video channel requested by more than one subscriber unit, and forward the video packet to each subscriber unit requesting the video channel. The Examiner rejected claim 35 as anticipated by Kostreski providing as the only support "figs. 6 and 7 and col. 19, lines 30-50." The Examiner identified no device disclosed in Kostreski that functions as an access point, or that determines if the received video packet corresponds to a video channel requested by more than one subscriber unit, identified by the Examiner as Kostreski's terminal (100), or that forwards the video packet to each subscriber unit requesting the video channel.

Kostreski has no need for Appellants' access point because Kostreski discloses a broadcast cable system in which all video content is broadcast simultaneously to all subscriber units. Claim 35 is patentable over Kostreski even if claim 34 is found not to be

patentable because Kostreski neither teaches nor suggests Appellants' access point determining if the received video packet corresponds to a video channel requested by more than one subscriber unit.

9. Claims 36-43 And 45 Are Separately Patentable Over Kostreski

Independent claim 36 provides a system for distributing high-speed information packets to at least one subscriber unit. Each information packet is associated with an information channel. The system includes a distributed network of routing elements for routing each information packet. Each routing element is in wireless communication with at least one other routing element in the network of routing elements. The system also includes at least one distribution center in communication with the distributed network of routing elements and with at least one subscriber unit. Each distribution center forwards each information packet to each subscriber unit requesting the information channel associated with each information packet.

The Examiner rejected claim 36 as anticipated by Kostreski, arguing Kostreski's "transmitter system and down converter" teach Appellants' distributed network of routing elements. As argued above, Kostreski's broadcast system is not a distributed network of routing elements, as no routing is taught or fairly suggested by such a broadcast system.

In addition, Kostreski neither teaches nor fairly suggests Appellants' distribution center forwarding information packets to subscriber units requesting an information channel associated with each information packet. The Examiner identifies Kostreski's headend (10) as disclosing Appellants' distribution center and Kostreski's terminal (100) as Appellants' subscriber units. However, there is no request of any kind that runs from Kostreski's terminals to the headend. This is because Kostreski discloses a cable broadcasting system which broadcasts the same information to every subscriber.

Claim 36 is patentable over Kostreski, even if the claims discussed above are held unpatentable, as Kostreski does not disclose Appellants' distribution center. Claims 37-46, which depend from claim 36, are therefore also patentable.

10. Claims 41-43 And 45 Are Separately Patentable Over Kostreski

Claim 41, which depends from claim 36, provides that the distribution center receives a request from a subscriber unit to access an information channel and requests transmission of the requested information channel if no other subscriber unit is receiving the requested information channel. The Examiner rejected claim 41 as anticipated by Kostreski providing as the only support "figs. 6 and 7" and "col. 19, lines 30-50." Kostreski's headend, identified by the Examiner as Appellants' distribution center, does not request transmission of a requested information channel if no other subscriber unit is receiving this channel.

Kostreski has no need for Appellants' distribution center because Kostreski discloses a broadcast cable system in which all video content is broadcast simultaneously to all subscriber units. Claim 41 is patentable over Kostreski even if claim 36 is found not to be patentable because Kostreski neither teaches nor suggests Appellants' distribution center that requests transmission of a requested information channel only if no other subscriber unit is receiving the requested information channel. Claims 42-46, which depend from claim 41, are therefore also patentable.

B. Claims 20-27 Are Patentable Under 35 U.S.C. § 103(a) Over Kostreski In View Of Gerszberg

The Examiner rejected claims 20-27 as an obvious combination of Kostreski and Gerszberg. Independent claim 20 provides a system for providing high-speed packetized information including a distributed routing network. The distributed routing network includes a plurality of distribution points, each distribution point in radio contact with at least one other distribution point. At least one of the distribution points includes at least one host digital

terminal (HDT) for converting high-speed information packets to an optical format and forwarding the information packets to subscriber units.

The Examiner relied on Kostreski for disclosing Appellants' distributed routing network. The Examiner argued Kostreski's "transmitter system and down converter" teach Appellants' distributed routing network. As discussed above, Kostreski's broadcast system is not Appellants' distributed routing network, as no routing is taught or fairly suggested by such a broadcast system. Gerszberg discloses a twisted pair and/or coaxial cable fed, integrated residence gateway controlled set-top device. As such, Gerszberg also fails to disclose Appellants' distributed routing network.

The Examiner admits that Kostreski does not disclose Appellants' host digital terminal. Instead, the Examiner proposes Gerszberg, referencing column 20, lines 23-30, as follows:

> A typical digital set top device comprises a controller, QPSK or QAM transmitters and receivers and MPEG encoding/decoding. The settop device may communicate with a high resolution HDTV television or an NTSC low resolution television or a personal computer or web-TV type device. The set-top may be coupled to high speed Ethernet or to coaxial cable according to the present invention and include features of the ISD/IRG as appropriate.

An HDTV (high definition television) is not an HDT (host digital terminal). The two are entirely different and one does not disclose or remotely suggest the other. Neither Gerszberg nor Kostreski teach or suggest Appellants' distribution points includes at least one host digital terminal. Claim 20 is patentable over any combination of Gerszberg and Kostreski.[3]

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[3]U.S. Patent No. 6,049,533 is to Norman *et al.* also appears to make no mention of Appellants' HDT.

C. Claims 18, 19, 44 And 46 Are Patentable Under 35 U.S.C. § 103(a) Over Kostreski In View Of Moriarty

The Examiner rejected claims 18, 19, 44 and 46 as an obvious combination of Kostreski and Moriarity.

1. Claims 18 And 44 Are Separately Patentable Over Kostreski And Moriarity

Claim 18, which depends from claim 10, further provides transmitting a dummy address as the destination for the requested transmission of the requested information channel. Claim 44, which depends from claim 41, provides that at least one distribution center further transmits a dummy address as the destination for the requested transmission of the requested information channel.

The Examiner admits that "Kostreski does not teach transmitting a dummy address as the destination for the requested transmission of the required information channel." Instead, the Examiner proposes Moriarity, citing column 19, lines 53-67, as follows:

> Preferably, the video request queue head register RQ_1__REG corresponds to the video request channel 602, the video sub-picture request queue head register RQ_2__REG corresponds to the video sub-picture request channel 606, and the audio request queue head register RQ_3__REG corresponds to the audio request channel 610. The request queue head registers (RQ_n__REG) 290 are 32-bit registers for storing the 32-byte aligned physical address of where the next request packet 250 has been placed by the device driver 230. Each RQ_n__REG 290 is initialized by the device driver 230 during system initialization with the physical address of a "dummy" packet 250 corresponding to request channels. Thereafter, the RQ_n__REG 290 is maintained by the DBE device 206. To implement this procedure, the DBE device 206 latches processor 100 writes to bits [31:5] of this register when the DBE device 206 is in RESET mode (EN__REG[0]="1"). The DBE device 206 assumes bits [4:0] of the physical address contain "0's." The DBE device 206 uses this register to fetch packets 250.

Moriarity discloses a multimedia personal computer. The "dummy" packet in Moriarity is part of a linked list scheme.

> DummyPacket This field points to a dummy command packet used by the device driver 230 to ensure a packet on the tail of the request queue does not reference itself. This condition can occur if the last submitted packet is returned to the free queue before another packet gets allocated and submitted to the controller 125. An allocate packet routine checks for this condition before returning the packet address to the caller. If the packet removed from the free queue happens to be the last packet submitted to the DBE device 206, the allocate packet routine swaps the removed packet address with the DummyPacket address.
>
> Moriarity, col. 17, lines 19-30.

Moriarity's dummy packet is not Appellants' dummy address. There is no disclosure in Moriarity for a dummy address. Moreover, there is no teaching or suggestion for transmitting a dummy address, or a dummy packet, as the destination for the requested transmission of a requested information channel. The Examiner makes no attempt to find such a teaching or suggestion.

In addition, there is no motivation to combine Moriarity with Kostreski. Kostreski discloses a broadcast system in which every channel is transmitted to every receiver. Hence, there is no need to transmit any request for an information channel and, particularly, no need to transmit a dummy address as the destination for the requested transmission of the requested information channel. The Examiner's justification for combining Moriarity with Kostreski, that the "dummy address [] can be quickly discarded from the system," makes no sense.

Claims 18 and 44 are patentable over any combination of Kostreski and Moriarity even if their corresponding base claims are found not to be patentable because Neither Kostreski nor Moriarity teach or fairly suggest Appellants' transmitting a dummy address as the destination for the requested transmission of the requested information channel.

2. Claims 19 And 46 Are Separately Patentable Over Kostreski And Moriarity

Claim 19, which depends from claim 10, further provides for determining that a subscriber unit is no longer accessing the information channel, canceling transmission of the information channel if no other subscriber unit is receiving the information channel, and noting that the subscriber unit is no longer receiving the information channel. Claim 46, which depends from claim 41, provides that at least one distribution center determines that a subscriber unit is no longer accessing the information channel and cancels transmission of the information channel if no other subscriber unit is receiving the information channel.

The Examiner rejected claims 19 and 46, but provided no basis whatsoever.

> Regarding claims 19 and 46 as for determining that a subscriber unit is no longer accessing the information channel; canceling transmission of the information channel if no other subscriber unit is receiving the information channel; and noting that the subscriber unit is no longer receiving the information channel. It would have been obvious [to] one of ordinary skill in the art at the time the invention was made to adapt to Kostreski and Moriarity this feature to maintain quality of service within the system.
>
> Office Action of June 14, 2005, pg. 9.

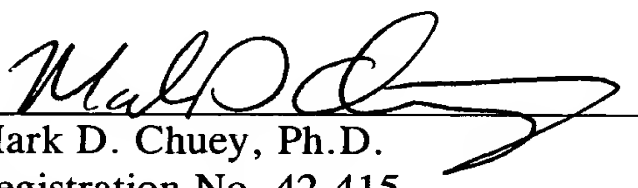
There is no reference to any figure in either Moriarity or Kostreski, no citation of any passage, not even an attempt to argue inherency. There is simply no justification of any kind that either reference discloses or suggests the claimed invention.

Moreover, the Examiner's motivation to combine (whatever it is that gets combined) is wrong. There is no motivation for canceling broadcasting because there is no way for Kostreski's headend to know whether or not any subscriber unit was receiving the information channel. There is no disclosure in Kostreski for terminals (100), connected only to receivers, to send any information of any kind. Nor is there any reason to do so because Kostreski's system broadcasts every channel at all times. Moriarity, which deals with a multimedia computer, does not fill in this missing information.

Claims 19 and 46 are patentable over any combination of Kostreski and Moriarity even if their corresponding base claims are found not to be patentable because Neither Kostreski nor Moriarity teach or fairly suggest Appellants' determining that a subscriber unit is no longer accessing the information channel and canceling transmission of the information channel if no other subscriber unit is receiving the information channel.

The fee of $500 as applicable under the provisions of 37 C.F.R. § 41.20(b)(2) is enclosed. Please charge any additional fee or credit any overpayment in connection with this filing to our Deposit Account No. 02-3978.

Respectfully submitted,
ANGUS O. DOUGHERTY et al.

By: 
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Enclosure - Appendices

VIII. CLAIMS APPENDIX

Claims 10-46 are pending in this application.

10. A method of distributing high-speed information packets to at least one subscriber unit, each information packet associated with an information channel, the method comprising:

routing each information packet through a distributed network of routing elements, each routing element in wireless communication with at least one other routing element in the network of routing elements;

receiving each information packet in a distribution center in communication with the distributed network of routing elements; and

forwarding each information packet to each subscriber unit in communication with the distribution center and requesting the information channel of which the information packet is associated.

11. A method of distributing high-speed information packets to at least one subscriber unit as in claim 10 wherein the information packets comprise video information.

12. A method of distributing high-speed information packets to at least one subscriber unit as in claim 10 wherein routing each information packet through a distributed network of routing elements comprises:

routing each information packet through a distributed network of distribution points; and

transmitting each information packet to an access point operative to communicate with a plurality of subscriber units.

13. A method of distributing high-speed information packets to at least one subscriber unit as in claim 12 wherein at least one distribution point is functioning as the distribution center.

14. A method of distributing high-speed information packets to at least one subscriber unit as in claim 12 wherein at least one access point is functioning as the distribution center.

15. A method of distributing high-speed information packets to at least one subscriber unit as in claim 10 further comprising:

receiving a request from a subscriber unit to access an information channel;

requesting transmission of the requested information channel if no other subscriber unit is receiving the requested information channel; and

noting that the requesting subscriber unit is receiving the requested information channel.

16. A method of distributing high-speed information packets to at least one subscriber unit as in claim 15 wherein receiving a request from a subscriber unit comprises determining that the requesting subscriber unit is within the coverage area of a distribution center.

17. A method of distributing high-speed information packets to at least one subscriber unit as in claim 15 wherein receiving a request from a subscriber unit comprises receiving a message from a subscriber unit.

18. A method of distributing high-speed information packets to at least one subscriber unit as in claim 15 further comprising transmitting a dummy address as the destination for the requested transmission of the requested information channel.

19. A method of distributing high-speed information packets to at least one subscriber unit as in claim 15 further comprising:

determining that a subscriber unit is no longer accessing the information channel;

canceling transmission of the information channel if no other subscriber unit is receiving the information channel; and

noting that the subscriber unit is no longer receiving the information channel.

20. A system for providing high-speed packetized information comprising a distributed routing network, the distributed routing network comprising a plurality of distribution points, each distribution point in the plurality of distribution points in radio contact with at least one other distribution point in the plurality of distribution points, at least one of the plurality of distribution points comprising at least one host digital terminal (HDT) for converting high-speed information packets to an optical format and forwarding the information packets to subscriber units.

21. A system for providing high-speed packetized information as in claim 20 wherein at least one subscriber unit is operative to receive information packets in an optical format.

22. A system for providing high-speed packetized information as in claim 20 further comprising at least one access point in communication with the

at least one HDT, the access point operative to convert information packets in an optical format into a format compatible with copper cabling.

23. A system for providing high-speed packetized information as in claim 22 wherein at least one subscriber unit is in communication with the at least one access point through a network interface device.

24. A system for providing high-speed packetized information as in claim 22 wherein at least one access point functions as a video distribution center.

25. A system for providing high-speed packetized information as in claim 20 wherein high-speed packetized information is provided through a VDSL service.

26. A system for providing high-speed packetized information as in claim 20 wherein high-speed information includes video information.

27. A system for providing high-speed packetized information as in claim 20 wherein at least one distribution point functions as a video distribution center.

28. A system for providing packetized video information to a plurality of subscriber units comprising a distributed routing network, the distributed routing network comprising a plurality of distribution points, each distribution point in the plurality of distribution points in radio contact with at least one other distribution point in the plurality of distribution points, at least one of the plurality of distribution points functioning as a video distribution center.

29. A system for providing packetized video information to a plurality of subscriber units as in claim 28 wherein at least one of the distribution points is operative to receive requests for video content from at least one subscriber unit and forward those requests to at least one video supplier.

30. A system for providing packetized video information to a plurality of subscriber units as in claim 28 wherein at least one video distribution center forwards video information packets comprising a video channel to each subscriber unit served by the video distribution center requesting the video channel.

31. A system for providing packetized video information to a plurality of subscriber units comprising:

a distributed routing network, the distributed routing network comprising a plurality of distribution points, each distribution point in the plurality

of distribution points in radio contact with at least one other distribution point in the plurality of distribution points; and

at least one access point in communication with the distributed routing network functioning as a video distribution center.

32. A system for providing packetized video information to a plurality of subscriber units as in claim 31 wherein the at least one access point is operative to receive requests for video content from at least one subscriber unit and forward those requests to at least one video supplier.

33. A system for providing packetized video information to a plurality of subscriber units as in claim 31 wherein the at least one access point replicates video information packets comprising a video channel for each of a plurality of subscriber units requesting the video channel.

34. A system for providing packetized video information to a plurality of subscriber units as in claim 31 wherein at least one access point is operative to

receive a request to access a video channel from a subscriber unit;

determine if the requested video channel is currently being accessed by another subscriber unit served by the access point; and

if the requested video channel is not currently being accessed by another subscriber unit served by the access point, forwarding the request to a video supplier.

35. A system for providing packetized video information to a plurality of subscriber units as in claim 34 wherein each of the at least one access point is further operative to

receive a video information packet from at least one video supplier;

determine if the received video packet corresponds to a video channel requested by more than one subscriber unit; and

forward the video packet to each subscriber unit requesting the video channel.

36. A system for distributing high-speed information packets to at least one subscriber unit, each information packet associated with an information channel, the system comprising:

a distributed network of routing elements for routing each information packet, each routing element in wireless communication with at least one other routing element in the network of routing elements; and

at least one distribution center in communication with the distributed network of routing elements and with at least one subscriber unit, each distribution

center forwarding each information packet to each subscriber unit requesting the information channel associated with each information packet.

37. A system for distributing high-speed information packets to at least one subscriber unit as in claim 36 wherein the information packets comprise video information.

38. A system for distributing high-speed information packets to at least one subscriber unit as in claim 36 wherein the distributed network of routing elements comprises:

a distributed network of distribution points operative to route each information packet; and

at least one access point operative to communicate with a plurality of subscriber units.

39. A system for distributing high-speed information packets to at least one subscriber unit as in claim 38 wherein at least one distribution point functions as the distribution center.

40. A system for distributing high-speed information packets to at least one subscriber unit as in claim 38 wherein at least one access point functions as the distribution center.

41. A system for distributing high-speed information packets to at least one subscriber unit as in claim 36 wherein the at least one distribution center receives a request from a subscriber unit to access an information channel and requests transmission of the requested information channel if no other subscriber unit is receiving the requested information channel.

42. A system for distributing high-speed information packets to at least one subscriber unit as in claim 41 wherein at least one distribution center receives a request from a subscriber unit based on a determination that the requesting subscriber unit is within the coverage area of the at least one distribution center.

43. A system for distributing high-speed information packets to at least one subscriber unit as in claim 41 wherein at least one distribution center receives a request from a subscriber unit based on a message from a subscriber unit.

44. A system for distributing high-speed information packets to at least one subscriber unit as in claim 41 wherein at least one distribution center further

transmits a dummy address as the destination for the requested transmission of the requested information channel.

45. A system for distributing high-speed information packets to at least one subscriber unit as in claim 41 wherein at least one distribution center notes that the requesting subscriber unit is receiving the requested information channel.

46. A system for distributing high-speed information packets to at least one subscriber unit as in claim 41 wherein at least one distribution center determines that a subscriber unit is no longer accessing the information channel and cancels transmission of the information channel if no other subscriber unit is receiving the information channel.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.